

REMARKS

Claims 1-11 and 15-16 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Viikari, et al. (WO 99/23117). Viikari teaches modification of cellulose by directly oxidizing TEMPO with an oxidizing agent, such as laccase. Viikari does not use halides in her enzyme oxidation method, using laccase to directly oxidize TEMPO. In contrast, the present invention uses a halide, which is oxidized and then the hypohalide oxidizes TEMPO. In fact, Viikari teaches away from using halides in an enzyme-oxidizing method, stating that the problem solved by such method is to "avoid the environmentally harmful halide-containing materials commonly used" in the conventional chemical oxidation. See abstract and page 2, line 19 et seq. Thus, the present invention differs from Viikari in the use of a halide catalyst and the rejection should be withdrawn.

Claims 1-11 and 15-16 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Jaschinski, et al. (US 6,824,645). Jaschinski carries out a method of cellulose oxidation similar to Viikari in that an enzyme is used to oxidize TEMPO directly. Jaschinski does not use a halide as in the present invention. Jaschinski does mention halides, but only in conjunction with the conventional chemical oxidation process, in this case with a peracid. Thus, the present invention differs from Jaschinski in the use of a halide catalyst and an enzyme, peroxidase, and the rejection should be withdrawn.

Claims 1-11 and 14-15 (assume 15-16 were intended) have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Amann, et al. (US 6,242,245) in view of Allen (US 6,503,507). As stated by the Examiner, Amann does not teach the use of a halide. The Examiner incorrectly states that "the chloride peroxidase, by the very essence of its name, must be in the presence of a chloride or other halide." Chloride peroxidase may be used on its own without chloride. In AMANN, chloride peroxidase is being used without chloride to oxidize TEMPO.

The Examiner then uses Allen or Johansen to remedy the deficiency, stating that the references teach that a haloperoxidase in the presence of halides and hydrogen peroxide is an effective oxidant. However, the deficiency is motivation to change the methodology from direct oxidation of TEMPO by an enzyme (e.g. chloride peroxidase) to oxidation of a halide by a halide peroxidase and then to use such hypohalide to oxidize TEMPO. Neither Allen nor Johansen provide such motivation. These two references are directed to disinfection (antimicrobial) and would not motivate one skilled in the art to the claimed method of selective oxidation of carbohydrates. Thus, the present claims are unobvious and the rejection should be withdrawn.

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In view of the foregoing, Applicant submits the Application is now in condition for allowance and respectfully requests early notice to that effect.

Respectfully submitted,



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